

What is claimed is:

1. A nickel electrode for alkaline secondary battery obtained by applying a paste containing active material particles comprising nickel hydroxide to a conductive substrate and drying the paste on the conductive substrate, wherein

a conductive layer comprising sodium-containing cobalt oxide is formed on a surface of the active material particles and tungsten powder and/or tungsten compound powder is added to the active material particles.

2. The nickel electrode for alkaline secondary battery as claimed in Claim 1, wherein

a weight ratio of sodium element in said sodium-containing cobalt oxide is in the range of 0.1 to 10 wt%.

3. The nickel electrode for alkaline secondary battery as claimed in Claim 1, wherein

a weight ratio of cobalt element in the conductive layer comprising said sodium-containing cobalt oxide to the active material particles comprising nickel hydroxide is in the range of 1 to 10 wt%.

4. The nickel electrode for alkaline secondary battery as claimed in Claim 1, wherein

a weight ratio of tungsten element in the tungsten powder and/or the tungsten compound powder to be added to a total weight of the active material particles comprising hydroxide nickel and having the conductive layer formed thereon is in the range

of 0.2 to 4 wt%.

5. The nickel electrode for alkaline secondary battery as claimed in Claim 1, wherein

an average particle diameter of the tungsten powder and/or tungsten compound powder is not more than 100 μ m.

6. The nickel electrode for alkaline secondary battery as claimed in Claim 1, wherein

at least one element selected from the group consisting of zinc, cobalt, calcium, magnesium, aluminum, manganese, yttrium, and ytterbium is included as solid solution into the active material particles comprising nickel hydroxide.

7. The nickel electrode for alkaline secondary battery as claimed in Claim 1, wherein

at least one element selected from zinc and cobalt is included as solid solution into the active material particles comprising nickel hydroxide.

8. The nickel electrode for alkaline secondary battery as claimed in Claim 6, wherein

a ratio of the above-mentioned element to a total weight of nickel in said nickel hydroxide and the above-mentioned element is not more than 10 % by atom.

9. The nickel electrode for alkaline secondary battery as claimed in Claim 1, wherein

at least one element powder or its compound powder selected from the group consisting of yttrium, ytterbium, calcium,

aluminum, erbium, gadolinium, thulium, lutetium, zinc, and niobium in addition to the tungsten powder and/or tungsten compound powder are added.

10. The nickel electrode for alkaline secondary battery as claimed in Claim 1, wherein

yttrium powder or yttrium compound powder in addition to the tungsten powder and/or tungsten compound powder are added.

11. The nickel electrode for alkaline secondary battery as claimed in Claim 10, wherein

said yttrium compound is Y_2O_3 .

12. An alkaline secondary battery provided with a positive electrode, a negative electrode, and an alkaline electrolyte solution, wherein

the positive electrode is the nickel electrode for alkaline secondary battery as claimed in Claim 1.

13. The alkaline secondary battery as claimed in Claim 12, wherein

the alkaline electrolyte solution contains potassium, lithium, and sodium.

14. The alkaline secondary battery as claimed in Claim 12, wherein

the alkaline electrolyte solution contains 4 to 10 mol/l of potassium hydroxide, 0.1 to 2 mol/l of lithium hydroxide, and 0.2 to 4 mol/l of sodium hydroxide.